

Summary

The present invention relates to a multiple coupling lock (120, 120') for the essentially environmentally sealed, reversible locking, and for the essentially environmentally sealed filling and/or refilling of bulk materials from flexible and/or rigid containers or means of conveyance, in particular hose sections, comprising at least two coupling locks (101, 101'; 110, 110'), which in each case are connected or are connectable via a means of conveyance (102, 102'), which is flexible and/or rigid at least in sections, in particular a hose, the opening area, in particular the inner diameter, of an opened, first coupling lock (101, 101') being larger than the outer circumference and/or opening area, in particular the outer and/or inner diameter of a second coupling lock (110, 110'), it being possible to dock the second coupling lock (110), in particular in an environmentally sealed manner, when the first coupling lock (101) is open, to a corresponding coupling lock (110') within the means of conveyance (102, 102'), and/or at least in sections penetrating through the opening of the first coupling lock (101), to form a docking device. Furthermore, the invention relates to a multiple docking device comprising this multiple coupling lock and a container and a means of conveyance, in each case also comprising this multiple coupling lock, and a procedure for the filling, refilling and/or emptying of flexible or rigid containers in particular in an environmentally sealed manner using the multiple coupling lock according to the invention.

List of reference numerals

1, 1'	Coupling lock
2,2'	First band
4,4'	Second band
6	Inner side of the first band
8	Inner side of the second band
10, 10'	First locking element
12, 12'	Second locking element
14, 14'	Upper side of first band
16, 16'	Upper side of second band
18, 18'	Third locking element
20, 20'	Fourth locking element
22	Outer side of first band
23	Outer side of second band
24, 24'	Fifth locking element
26	Edge of bag
28	Join
30, 30'	Locking lid
32, 32'	Sixth locking element
34	Slit
36	Docking device
38	First flexible container
40	Second flexible container
50, 50'	Coupling lock
52	Frame band, narrow
54	Frame band, long
56	Join element, film hinge
57	Notch
58, 58'	Folding frame
60	Inner side of frame band 52
62	Inner side of frame band 54
64	First locking rail
66	Second locking rail

68	Upper side of frame band 52
70	Upper side of frame band 54
72, 72'	First locking element
74	Extension of frame band
76	First clamping element
78	First clamping opening
80	Locking lid, transport handle
82	Second clamping opening
84, 84'	Third clamping opening
86	First film hinge
88	Second film hinge
90	First handle element
92	Second handle element
94	Second clamping element
96	Handle bar
98, 98'	Latching element
99	Material outlet, notches
100	Docking device
101, 101'	First coupling lock
102, 102'	Hose, hose element
104	First docking device
110, 110'	Second coupling lock
112, 112'	Basic body of coupling lock
114, 114'	Container
116	Triclamp connection
118	Actuation device
120, 120'	Multiple coupling lock
130	Multiple docking device
132	Triclamp component
134	Triclamp component
136	Seal
138	Hose clamp
150	Outlet or lower side of coupling lock 50, 50'
152, 152'	First frame band of third frame band pair

154, 154'	Second frame band of third frame band pair
156, 156'	Third frame band pair
158	Outer side of first frame band 152
160	Outer side of second frame band 154
162, 162'	Operating handle of first frame band 152
164, 164'	Operating handle of second frame band 154
166, 166'	Centring cone on first operating handle 162
168, 168'	Centring cone on second operating handle 164
170, 170'	Clamping collar on first operating handle 162
172, 172'	Clamping collar on second operating handle 164
174	Traverse ribs on operating handle
176	Join element
178	Join element
180	Join element
182	Join element
184	First frame band of first frame band pair
186	Second frame band of first frame band pair
188	First frame band of second frame band pair
190	Second frame band of second frame band pair
192	First frame band pair
194	Second frame band pair
196	Join element
198	Join element
200, 200'	Encompassing sealing lip
202	Concavity on first frame band of third frame band pair
204	Concavity on second frame band of third frame band pair
210, 210'	Clamping or latching lock
212	Spacer
214	Spacer
216	Spacer
218	Spacer
230	Spacer
232	Adjusting element
234	Adjusting element

238	Attachment
240	Sealing tongue
242	Sealing tongue
244, 244'	Locking element
250, 250'	Notch
252, 252'	Protrusion, seam
254, 254'	Strip, seam
256, 256'	Strip, seam